

### Remarks

#### **I. INTRODUCTION**

Claims 5 to 10 are currently pending in the present application. Reconsideration of the patentability of the pending claims is requested based on the following discussion.

#### **II. OBJECTION TO THE SPECIFICATION**

The abstract of the disclosure was object to on the grounds that it does not commence on a separate sheet in according with 37 CFR 1.52(b)(4). Applicants have replaced amended the Specification to replace the Abstract with the Abstract annexed hereto. No new matter has been added.

#### **III. REJECTION OF CLAIMS 5-8 UNDER 35 U.S.C. 103(a)**

Claims 5-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,070,252 to Castenschiold et al. ("Castenschiold") in view of U.S. Patent No. 3,629,744 to Maier et al. ("Maier") and German Patent No. 44 47 391 (the "'391 patent"). It is respectfully submitted that none of claims 5-8 are rendered obvious by the combination of Castenschiold, Maier and the '391 patent, for at least the following reasons.

To sustain an obviousness rejection, the Patent Office has the burden of showing that there is some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Moreover, this teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). In addition, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Independent claim 5 recites a drive unit for switching a circuit breaker on and off that includes, *inter alia*, a reversible d.c. motor, a switching device including two separately drivable and interlocked reversing switches, each of the reversing switches being assigned to a respective direction of rotation of the d.c. motor, contacts of the reversing switches performing a current reversal on windings of the d.c. motor as is necessary to reverse the direction of rotation of the d.c. motor.

Castenschiold purportedly discloses a drive device used to implement a switchover of the voltage supply for an electrical load from a normal electrical energy source to an emergency-energy source. A three-pole selector switch is switched over by a solenoid in such

a way that the electrical load is alternatively able to be connected to one of the electrical energy sources. In addition, the neutral conductor of the electrical load is switched over to the neutral conductor of the normal electrical energy source or to the neutral conductor of the emergency-energy source. To prevent an interruption of the connection of the electrical load to one of the neutral conductors while the phase conductors are still connected to one of the electrical energy sources, a switchover movement of the solenoid ensures that the load is stably connected to at least one of the neutral conductors of the two energy sources. Otherwise, instabilities of the phase currents could occur.

However, there is no disclosure or suggestion in Castenschiold of a *reversible* d.c. motor that can reverse its direction of rotation (i.e., clockwise vs. counterclockwise). While the selector switch according to Castenschiold includes an electrical driving means (solenoid), which triggers the actual selector switch, such a solenoid does not constitute a d.c. motor reversible in its direction of rotation. Also, with respect to the triggering of the solenoid, Castenschiold merely states (at col. 8, lines 41 to 44) that an electrical signal is used to trigger the solenoid. However, according to the claimed subject matter, the reversible d.c. motor is triggered with the aid of two low-power relays including reversing switches and power contactors.

Furthermore, the switching device according to Castenschiold is *driven by* the solenoid and does not trigger the solenoid. For at least these reasons, it is submitted that Castenschiold does not disclose a reversible d.c. motor or a switching device including two separately drivable and interlocked reversing switches, each of the reversing switches being assigned to a respective direction of rotation of the d.c. motor, contacts of the reversing switches performing a current reversal on windings of the d.c. motor as is necessary to reverse the direction of rotation of the d.c. motor.

Neither Meier nor the '391 patent cure the deficiencies of the Castenschiold reference particularly since the principles of operation of these references are incompatible with the primary reference, such that there would be no motivation for those skilled in the art to combine their respective teachings.. See In re Ratti, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959); M.P.E.P. §2143.01

Specifically, with regard to the Maier reference, it purportedly discloses a drive motor for switching a circuit breaker on and off. Figure 6 of Maier illustrates the electrical triggering of the drive motor by which a change in the direction of rotation of the drive motor may be implemented. The engine control has two relays X and Y whose contacts X2 and Y2, respectively, implement a current reversal of the windings of the electromotor in order to

change the direction of rotation in this manner. Relays X and Y are activated via pressure-operated switches (push button 1 and push button 2). Arranged in the current path in front of relay contacts X2 and Y2 are a power contact A and B, respectively. As stated in col. 7, lines 56 to 59, the current driving the motor is first interrupted by opening power contact A so as to close circuit breaker 7 prior to relay contact X2 being opened. This protects relay contact X2 from an electric arc so that a smaller relay X may be used (relay Y works analogously). When the motor 75 drives circuit breaker 7 into its open position, power contact B opens before relay contact Y2 does. This also protects the relay contact, and a smaller relay may be used.

If one skilled in the art were to combine the Castenschiold and Maier references, an arrangement would be obtained in which a selector switch for the switchover of the current supply of an electric load from a first normal energy source to an emergency energy source is driven by a solenoid (as disclosed in Castenschiold). Were the skilled practitioner then to use the engine control according to Maier to control the solenoid, the solenoid would be reversed in polarity in its movement direction via two (small) relays X and Y. Power contact A and B, respectively, would be connected in front of small relays X and Y, each of which opens before relay contacts X2 and Y2 are opened.

However, according to the subject matter of claim 5, only two low-power relays are provided in the switching device for the d.c. motor, each of which combines in itself the function of one power contact (for example, A), and a relay contact (for example, X2). To prevent destruction of the relay contacts in the subject matter of the present invention, an equalizing capacitor is provided, which is connected in parallel to the relay contact. In contrast, Maier only suggests the use of a relay and a separate power contact A or B. Thus, the power contacts and the reversing switches are not combined in a low-power relay. In addition, Maier provides no teaching or suggestion of an equalizing capacitor, which is connected in parallel to a relay contact.

With regard to the '391 patent, it purportedly discloses a circuit breaker situated in a vacuum interrupter chamber. One skilled in the art would not apply the measures implemented in the vacuum switch to a relay that operates in a normal air atmosphere because such a skilled practitioner would not assume that the measures indicated in this reference would be sufficient for the reliable operation of the low-power relay in an air atmosphere. Instead, more involved measures would be required to protect the relay contacts in the poorly insulating air atmosphere than would be necessary in the case of a circuit breaker in a vacuum interrupter chamber.

However, even if one skilled in the art nevertheless were to combine Castenschiold, Maier and the '391 patent, this would result in a changeover switch between two electrical energy sources driven by a solenoid with a control to switch the direction of rotation of the solenoid including two relays, these having two power contacts connected in series to protect the relay contacts. The power contacts (since these are primarily affected by the danger of an electric arc) would have an equalizing capacitor connected in parallel (from the '391 patent). Such a device still would not disclose or suggest the subject matter of claim 5 in which, instead of one power contact and one relay in each case, only one low-power relay is used, an equalizing capacitor being connected in parallel to its contacts.

It is emphasized, however, that one skilled in the art would not consider combining the '391 patent with the other references in any case since the '391 patent relates to a circuit breaker in a vacuum interrupter chamber whereas the relays according to Maier are designed for an air atmosphere.

For the foregoing reasons, it is respectfully submitted that the references relied upon do not render obvious the subject matter of independent claim 5, or its dependent claims 6-8.

#### IV. REJECTION OF CLAIM 9 UNDER 35 U.S.C. 103(a)

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Castenschiold, Maier and the '391 patent and further in view of German Patent No. 38 23 574 (the "'574 patent").

Claim 9 depends from independent claim 5. As the '574 patent does not cure the deficiencies of the references discussed above with respect to the subject matter of independent claim 5, it is submitted that it also does not cure the deficiencies of those references with respect to claim 9 which depends from , and further limits, independent claim 5.

It is accordingly submitted that claim 9 is not rendered obvious by the references relied upon.

#### V. CLAIM 10

Claim 10 has been added. Support for the subject matter of claim 10 can be found, e.g., on page 4, lines 16-21 of the Specification. No new matter has been added.

#### VI. CONCLUSION

In light of the foregoing, Applicants respectfully submit that all pending claims 5-10 are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

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